

**REMARKS**

Applicant has reviewed and considered the Office Action mailed on September 10, 2003, and the references cited therewith.

Claims 1, 17-19, 21, 22, 39-42, and 44 are amended, no claims are canceled, and no claims are added; as a result, claims 1-45 are now pending in this application. The amendments to the claims are fully supported by the specification as originally filed. No new matter is introduced. The amendments are made to clarify the claims. Applicant respectfully requests reconsideration of the above-identified application in view of the amendments above and the remarks that follow.

Claims 1 and 17 are amended for clarification and finds support in the specification, for example, on page 26, lines 26-27 and page 27, lines 8-9.

Claims 18, 19, 40, and 41 are amended to correspond to the language of claim 17 from which these claims depend.

Claims 21 and 22 are amended to correct typographical errors.

Claim 39 is amended to correspond to the language of claim 1 from which this claim depends.

Claim 42 finds support in the specification, for example, on page 27, lines 1-2.

**First §112 Rejection of the Claims**

Claims 1-45 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Applicant traverses these grounds for rejection.

Applicant amends independent claims 1, 17, and 42 to further clarify these claims to expedite the prosecution of the instant application. As amended, Applicant submits that claims 1-45 satisfy 35 USC § 112, second paragraph.

In addition, the term “adjacent” provides definition as to the position of the extended waveguide cavity relative to a substrate waveguide in a glass substrate as recited in amended claim 1. The Office Action states “[t]he term ‘adjacent’ does not provide to the reader the relative placement of the ‘extended diode laser cavity.’ Only that the ‘extended diode laser cavity’ is somewhere near the substrate waveguide.” Applicant notes that “somewhere near the

substrate waveguide” is a “relative placement.” Thus, as expressed by the Office Action, the use of the term “adjacent” relates to broadness and not to indefinite status. Further, the additional recitation, “so that pump light from along a length of the extended waveguide cavity of the diode laser’s resonator cavity is transferred into the substrate waveguide along at least a portion of the length of the substrate waveguide,” provides further limitation to a perceived broadness or generality of the term “adjacent.” The Office Action further states “the term ‘adjacent’ and ‘absorbed along a length’ are given the broadest reasonable interpretation,” which also indicates that the term ‘adjacent’ is a broad term not an indefinite term. Further, combining “adjacent” with “along a length of the substrate waveguide,” as recited in claim 1, provides further clarity regarding position since “adjacent” and “along a length” are positional terms.

As to the Office Action query regarding “how the pump laser is positioned so that light is absorbed along a length to the waveguide,” the recitation “positioned adjacent and along a length” defines a positioning within the common use of these terms. Further the recitation in claim 1 “so that pump light from along a length of the extended waveguide cavity of the diode laser’s resonator cavity is transferred into the substrate waveguide along at least a portion of the length of the substrate waveguide” provides further limitations on such positioning.

As to the structure of the diode pump laser, the structure for the diode pump laser recited in amended claim 1 further clarifies the structure of the diode pump laser as can be understood by one skilled in the art.

Independent claims 17 and 42 are amended along similar lines as claim 1.

Applicant respectfully requests withdrawal of these rejections of claims 1-45, and reconsideration and allowance of these claims.

#### Second §112 Rejection of the Claims

Claims 1-16 were rejected under 35 USC § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements.

Applicant traverses these grounds for rejection.

MPEP § 2172.01 states

A claim which omits matter disclosed to be essential to the invention as described in the specification or in other statements of record may be rejected under 35 U.S.C. 112, first paragraph, as not enabling. *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

See also MPEP § 2164.08(c). Such essential matter may include missing elements, steps or necessary structural cooperative relationships of elements described by the applicant(s) as necessary to practice the invention. (*underlining added*)

The Office Action has not referenced a section in Applicant's specification that expressly identifies "1) the reflectors/DBR gratings that make up the resonant cavity of the waveguide resonator, 2) the cavity length relationships and 3) the DBR grating spacing" as described by the Applicant as necessary to practice the invention. Further, Applicant submits that the claims are not limited to specific embodiments described in the specification. The embodiments are examples of the invention defined in the claims. Additionally, as examples, figures may include more detail than necessary to practice the invention.

Since the Office Action has not provided a reference to the specification or other source that identifies missing or omitted elements as essential, Applicant submits that these rejections under 35 USC § 112, second paragraph are not proper.

Applicant respectfully requests withdrawal of these rejections of claims 1-16, and reconsideration and allowance of these claims.

*Third §112 Rejection of the Claims*

Claims 17-22 were rejected under 35 USC § 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements.

Applicant traverses these grounds for rejection.

The Office Action states "[t]he omitted steps are: all the steps associated with the laser light propagating through the device of Fig. 1 as discussed above." As noted above in this response, the Office Action has not provided a reference to the specification or other source that identifies missing or omitted elements as essential, as required from a reading of MPEP § 2172.01. Therefore, Applicant submits that these rejections under 35 USC § 112, second paragraph are not proper.

Applicant respectfully requests withdrawal of these rejections of claims 17-22, and reconsideration and allowance of these claims.

§102 Rejection of the Claims

Claims 1-5, 11, 17-19, 23-29, 32-33 and 39-45 were rejected under 35 USC § 102(b) as being anticipated by Chang et al. (US 5,142,660). Applicant traverses these grounds for rejection.

Applicant can not find a teaching or suggestion in Chang et al. (hereafter Chang) of a diode pump laser having a diode laser and a waveguide cavity abutted to an output facet of the diode laser to provide an extended waveguide cavity such that a laser resonator cavity of the diode pump laser includes the extended waveguide cavity, as recited in claim 1. “Anticipation requires the presence in a single prior reference disclosure of each and every element of the claimed invention, *arranged as in the claim.*” *Lindemann Maschinenfabrik GmbH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 221 USPQ 481, 485 (Fed. Cir. 1984) (citing *Connell v. Sears, Roebuck & Co.*, 722 F.2d 1542, 220 USPQ 193 (Fed. Cir. 1983)). Thus, Applicant submits that Chang does not anticipate claim 1 and, therefore, claim 1 is patentable over Chang.

Applicant can not find a teaching or suggestion of a diode pump laser having a diode laser and a waveguide abutted to an output facet of the diode laser as recited in claims 17 and 42. Thus, Applicant submits that Chang does not anticipate claim 17 and 42, and, therefore, claims 17 and 42 are patentable over Chang.

Claims 2-4, 11, 23-29, 32, 33, and 39, claims 18, 19, 40 and 41, and claims 43-45 are dependent on claims 1, 17, and 42, respectively, and are patentable over Chang for the reasons stated above and additionally in view of the further elements of these dependent claims.

Applicant respectfully requests withdrawal of these rejections of claims 1-5, 11, 17-19, 23-29, 32-33 and 39-45, and reconsideration and allowance of these claims.

§103 Rejection of the Claims

Claims 6-10, 12-16, 20-22, 30-31 and 34-38 were rejected under 35 USC § 103(a) as being unpatentable over Chang et al. as applied to claims 1-5, 11, 17-19, 23-29, 32-33 and 39-41, and further in view of Kaminow et al. (US 4,039,249). Applicant traverses these grounds for rejection.

Applicant can not find a teaching or suggestion in Chang of a diode pump laser having a diode laser and a waveguide or waveguide cavity abutted to an output facet of the diode laser as

recited in claims 1, 17, or 42. Kaminow et al. (hereafter Kaminow) deals with integrated optical devices including a tunable fixed grating. *See Kaminow, Abstract and Summary.* Applicant can not find a teaching or suggestion in Kaminow of a diode pump laser having a diode laser and a waveguide or waveguide cavity abutted to an output facet of the diode laser as recited in claims 1, 17, or 42. Therefore, Kaminow does not cure the deficiencies of Chang. As a result, Applicant submits that the combination of Chang and Kaminow does not teach or suggest all the elements of independent claims 1, 17, and 42. Thus, Applicant further submits that the combination of Chang and Kaminow does not establish a *prima facie* case of obviousness with respect to claims 1, 17, and 42 and that claims 1, 17, and 42 are patentable over Chang in view of Kaminow.

Claims 6-10, 12-16, 30, 31, and 34, and claims 20-22 and 35-38 are dependent on claims 1 and 17, respectively, and are patentable over Chang in view of Kaminow for the reasons stated above and additionally in view of the further elements of these dependent claims.

Applicant respectfully requests withdrawal of these rejections of claims 6-10, 12-16, 20-22, 30-31 and 34-38, and reconsideration and allowance of these claims.

**CONCLUSION**

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 371-2157 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743.

Respectfully submitted,

MARK P. BENDETT ET AL.

By their Representatives,

SCHWEGMAN, LUNDBERG, WOESSNER & KLUTH, P.A.  
P.O. Box 2938  
Minneapolis, MN 55402  
(612) 371-2157

Date 10 December 2003

By \_\_\_\_\_

  
David R. Cochran

Reg. No. 46,632

**CERTIFICATE UNDER 37 CFR 1.8:** The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Mail Stop AF, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 10th day of December, 2003.

**Candis B. Buending**

---

Name

Signature

---

